

## CLAIMS

What is claimed is:

- 1 1. A method for remotely managing a wireless device over a  
2 telecommunications network comprising a server and the wireless device, the  
3 method comprising the steps of:  
4       establishing a communicative connection between the server and the  
5 wireless device over a signaling channel of the telecommunications network;  
6       transmitting a command from the server to the wireless device over the  
7 signaling network; and  
8       executing the command at the wireless device after verifying the signature  
9 of the command and signature of the device is in agreement.
- 1 2. The method of claim 1, wherein the signaling channel of the  
2 telecommunications network comprises a Common Channel Signaling System 7  
3 channel.
- 1 3. The method of claim 2, wherein the signaling channel of the  
2 telecommunications network comprises a Short Message Service.

1 4. The method of claim 3, wherein the transmitting step comprises the step  
2 of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 5. The method of claim 4, wherein the transmitting step comprises the step  
2 of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device in a Short Message Service message.

1 6. The method of claim 3, wherein the transmitting step comprises the step  
2 of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 7. The method of claim 6, wherein the communicative connection is  
2 established periodically.

1 8. The method of claim 6, wherein the communicative connection is  
2 established based on a threshold condition.

1 9. The method of claim 6, wherein the command comprises at least one of:  
2 enabling/disabling access of the wireless device to the server;  
3 enabling/disabling applications that may run on the wireless device;  
4 erasing all or part of contents of the wireless device;  
5 transmitting new commands and parameters to the wireless device;  
6 querying a current state of the wireless device;  
7 monitoring a level of a battery in the wireless device;  
8 monitoring a location of the wireless device in the wireless network; and  
9 reconfiguring applications that may run on the wireless device.

1 10. The method of claim 9, further comprising the step of:  
2 transmitting information relating to execution of the command at the  
3 wireless device from the wireless device to the server.

1 11. The method of claim 10, wherein the information relating to execution of  
2 the command is transmitted periodically.

1 12. The method of claim 10, wherein the information relating to execution of  
2 the command is transmitted based on a threshold condition of the wireless  
3 device.

1 13. The method of claim 3, wherein the transmitting step comprises the step  
2 of:  
3 transmitting registration information relating to the wireless device from  
4 the wireless device to the server;  
5 verifying the registration information at the server;  
6 establishing a DCB for the wireless device at the server;  
7 placing a command for the wireless device in the DCB ; and  
8 delivering the command from the DCB to the wireless device.

1 14. The method of claim 13, wherein the delivering step comprises the steps  
2 of:  
3 establishing a connection between the wireless device and the server;  
4 transmitting a request for contents of the DCB from the wireless device  
5 to the server; and  
6 transmitting the contents of the DCB from the server to the wireless  
7 device.

1 15. The method of claim 14, wherein the connection is established  
2 periodically.

1 16. The method of claim 14, wherein the connection is established based on a  
2 threshold condition.

1 17. The method of claim 13, wherein the delivering step comprises the steps  
2 of:  
3 establishing a connection between the wireless device and the server;  
4 transmitting the contents of the DCB from the server to the wireless  
5 device without a request from the wireless device; and  
6 accepting the contents of the DCB at the wireless device.

1 18. The method of claim 15, wherein the connection is established  
2 periodically.

1 19. The method of claim 15, wherein the connection is established based on a  
2 threshold condition.



1 24. A method for remotely managing a wireless device over a  
2 telecommunications network comprising the steps of:  
3 establishing a communicative connection with the wireless device over a  
4 signaling channel of the telecommunications network; and  
5 transmitting a command to the wireless device over the signaling  
6 network.; and  
7 executing the command at the wireless device.

1 25. The method of claim 24, wherein the signaling channel of the  
2 telecommunications network comprises a Common Channel Signaling System 7  
3 channel.

1 26. The method of claim 25, wherein the signaling channel of the  
2 telecommunications network comprises a Short Message Service.

1 27. The method of claim 26, wherein the transmitting step comprises the step  
2 of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 28. The method of claim 27, wherein the transmitting step comprises the step  
2 of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device in a Short Message Service message.

1 29. The method of claim 26, wherein the transmitting step comprises the step  
2 of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 30. The method of claim 29, wherein the communicative connection is  
2 established periodically.

1 31. The method of claim 29, wherein the communicative connection is  
2 established based on a threshold condition.

1 32. The method of claim 29, wherein the command comprises at least one of:  
2 enabling/disabling access of the wireless device to the server;  
3 enabling/disabling applications that may run on the wireless device;



4 erasing all or part of contents of the wireless device;  
5 transmitting new commands and parameters to the wireless device;  
6 querying a current state of the wireless device;  
7 monitoring a level of a battery in the wireless device;  
8 monitoring a location of the wireless device in the wireless network; and  
9 reconfiguring applications that may run on the wireless device.

1 33. The method of claim 32, further comprising the step of:  
2 transmitting information relating to execution of the command at the  
3 wireless device from the wireless device to the server.

1 34. The method of claim 33, wherein the information relating to execution of  
2 the command is transmitted periodically.

1 35. The method of claim 28, wherein the transmitting step comprises the steps  
2 of:  
3 receiving registration information from the wireless device;  
4 verifying the received registration information;  
5 placing a command for the wireless device in a DCB ; and  
6 delivering the command to the wireless device.

1 36. The method of claim 35, wherein the delivering step comprises the steps  
2 of:  
3 establishing a connection with the wireless device;  
4 receiving a request for contents of the DCB from the wireless device;  
5 and  
6 transmitting the contents of the DCB to the wireless device.

1 37. The method of claim 36, wherein the connection is established  
2 periodically.

1 38. The method of claim 36, wherein the connection is established based on a  
2 threshold condition.

1 39. The method of claim 35, wherein the delivering step comprises the steps  
2 of:  
3 establishing a connection with the wireless device; and  
4 transmitting the contents of the DCB to the wireless device without a  
5 request from the wireless device.

1 40. The method of claim 39, wherein the connection is established  
2 periodically.

1 41. The method of claim 39, wherein the connection is established based on a  
2 threshold condition.

1 42. The method of claim 35, wherein the command comprises one of:  
2 enabling/disabling access of the wireless device to the server;  
3 enabling/disabling applications that may run on the wireless device;  
4 erasing all or part of contents of the wireless device;  
5 transmitting new commands and parameters to the wireless device;  
6 querying a current state of the wireless device;  
7 monitoring a level of a battery in the wireless device; and  
8 monitoring a location of the wireless device in the wireless network.

1 43. The method of claim 35, further comprising the step of:  
2 receiving information relating to execution of the command at the  
3 wireless device from the wireless device.

1 44. A system for remotely managing a wireless device over a wireless  
2 network, the system comprising:  
3 a processor operable to execute computer program instructions; and  
4 a memory operable to store computer program instructions executable  
5 by the processor, for performing the steps of:  
6 establishing a communicative connection between the server and the  
7 wireless device over a signaling channel of the telecommunications network;  
8 transmitting a command from the server to the wireless device over the  
9 signaling network; and  
10 executing the command at the wireless device.

1 45. The system of claim 44, wherein the signaling channel of the  
2 telecommunications network comprises a Common Channel Signaling System 7  
3 channel.

1 46. The system of claim 45, wherein the signaling channel of the  
2 telecommunications network comprises a Short Message Service.

1 47. The system of claim 46, wherein the transmitting step comprises the step  
2 of:

3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 48. The system of claim 47, wherein the transmitting step comprises the step  
2 of:

3 transmitting the command to a management agent process executing on  
4 the wireless device in a Short Message Service message.

1 49. The system of claim 46, wherein the transmitting step comprises the step  
2 of:

3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 50. The system of claim 49, wherein the communicative connection is  
2 established periodically.

1 51. The system of claim 49, wherein the communicative connection is  
2 established based on a threshold condition.

1    52.    The system of claim 49, wherein the command comprises at least one of:  
 2            enabling/disabling access of the wireless device to the server;  
 3            enabling/disabling applications that may run on the wireless device;  
 4            erasing all or part of contents of the wireless device;  
 5            transmitting new commands and parameters to the wireless device;  
 6            querying a current state of the wireless device;  
 7            monitoring a level of a battery in the wireless device;  
 8            monitoring a location of the wireless device in the wireless network; and  
 9            reconfiguring applications that may run on the wireless device.

1    53.    The system of claim 52, further comprising the step of:  
 2            transmitting information relating to execution of the command at the  
 3    wireless device from the wireless device to the server.

1    54.    The system of claim 53, wherein the information relating to execution of  
 2    the command is transmitted periodically.

1    55.    The system of claim 53, wherein the information relating to execution of  
 2    the command is transmitted based on a threshold condition of the wireless  
 3    device.

1 56. The system of claim 46, wherein the transmitting step comprises the step  
2 of:  
3 receiving registration information from the wireless device;  
4 verifying the received registration information;  
5 placing a command for the wireless device in a DCB ; and  
6 delivering the command to the wireless device.

1 57. The system of claim 56, wherein the delivering step comprises the steps  
2 of:  
3 establishing a connection with the wireless device;  
4 receiving a request for contents of the DCB from the wireless device;  
5 and  
6 transmitting the contents of the DCB to the wireless device.

1 58. The system of claim 57, wherein the connection is established  
2 periodically.

1 59. The system of claim 57, wherein the connection is established based on a  
2 threshold condition.

1     60.     The system of claim 56, wherein the delivering step comprises the steps  
2     of:

3        establishing a connection with the wireless device; and

4        transmitting the contents of the DCB to the wireless device without a

5        request from the wireless device.

1 61. The system of claim 60, wherein the connection is established  
2 periodically.

1     62.     The system of claim 60, wherein the connection is established based on a  
2     threshold condition.

1     63.     The system of claim 56, wherein the command comprises at least one of:

2             enabling/disabling access of the wireless device to the server;

3             enabling/disabling applications that may run on the wireless device;

4             erasing all or part of contents of the wireless device;

5             transmitting new commands and parameters to the wireless device;

6             querying a current state of the wireless device;

7             monitoring a level of a battery in the wireless device;



8 monitoring a location of the wireless device in the wireless network; and  
9 reconfiguring applications that may run on the wireless device.

1 64. The system of claim 56, further comprising the step of:  
2 receiving information relating to execution of the command at the  
3 wireless device from the wireless device.

1 65. A computer program product for remotely managing a wireless device  
2 over a wireless network, comprising:  
3 a computer readable medium;  
4 computer program instructions, recorded on the computer readable  
5 medium, executable by a processor, for performing the steps of  
6 establishing a communicative connection between the server and the  
7 wireless device over a signaling channel of the telecommunications network;  
8 transmitting a command from the server to the wireless device over the  
9 signaling network; and  
10 executing the command at the wireless device.

1 66. The computer program product of claim 65, wherein the signaling channel  
2 of the telecommunications network comprises a Common Channel Signaling  
3 System 7 channel.

1 67. The computer program product of claim 66, wherein the signaling channel  
2 of the telecommunications network comprises a Short Message Service.

1 68. The computer program product of claim 67, wherein the transmitting step  
2 comprises the step of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 69. The computer program product of claim 68, wherein the transmitting step  
2 comprises the step of:  
3 transmitting the command to a management agent process executing on  
4 the wireless device in a Short Message Service message.

1 70. The computer program product of claim 67, wherein the transmitting step  
2 comprises the step of:

3 transmitting the command to a management agent process executing on  
4 the wireless device.

1 71. The computer program product of claim 70, wherein the communicative  
2 connection is established periodically.

1 72. The computer program product of claim 70, wherein the communicative  
2 connection is established based on a threshold condition.

1 73. The computer program product of claim 70, wherein the command  
2 comprises at least one of:

3 enabling/disabling access of the wireless device to the server;

4 enabling/disabling applications that may run on the wireless device;

5 erasing all or part of contents of the wireless device;

6 transmitting new commands and parameters to the wireless device;

7 querying a current state of the wireless device;

8 monitoring a level of a battery in the wireless device;

9 monitoring a location of the wireless device in the wireless network; and

10 reconfiguring applications that may run on the wireless device.

1 74. The computer program product of claim 73, further comprising the step  
2 of:  
3 transmitting information relating to execution of the command at the  
4 wireless device from the wireless device to the server.

1 75. The computer program product of claim 74, wherein the information  
2 relating to execution of the command is transmitted periodically.

1 76. The computer program product of claim 74, wherein the information  
2 relating to execution of the command is transmitted based on a threshold  
3 condition of the wireless device.

1 77. The computer program product of claim 67, wherein the transmitting step  
2 comprises the step of:  
3 receiving registration information from the wireless device;  
4 verifying the received registration information;  
5 placing a command for the wireless device in a DCB ; and  
6 delivering the command to the wireless device.

1 78. The computer program product of claim 77, wherein the delivering step  
2 comprises the steps of:

3 establishing a connection with the wireless device;

4 receiving a request for contents of the DCB from the wireless device;

5 and

6 transmitting the contents of the DCB to the wireless device.

1 79. The computer program product of claim 78, wherein the connection is  
2 established periodically.

1 80. The computer program product of claim 78, wherein the connection is  
2 established based on a threshold condition.

1 81. The computer program product of claim 77, wherein the delivering step  
2 comprises the steps of:

3 establishing a connection with the wireless device; and

4 transmitting the contents of the DCB to the wireless device without a  
5 request from the wireless device.

1 82. The computer program product of claim 81, wherein the connection is  
2 established periodically.

1 83. The computer program product of claim 81, wherein the connection is  
2 established based on a threshold condition.

1 84. The computer program product of claim 77, wherein the command  
2 comprises one of:

3 enabling/disabling access of the wireless device to the server;

4 enabling/disabling applications that may run on the wireless device;

5 erasing all or part of contents of the wireless device;

6 transmitting new commands and parameters to the wireless device;

7 querying a current state of the wireless device;

8 monitoring a level of a battery in the wireless device;

9 monitoring a location of the wireless device in the wireless network; and

10 reconfiguring applications that may run on the wireless device.

1 85. The computer program product of claim 77, further comprising the step  
2 of:

- 3 receiving information relating to execution of the command at the
- 4 wireless device from the wireless device.